

6 July 1960

TO: Deputy Director, Production
Attn: [REDACTED] PROD-041 25X1A

SUBJECT: Airborne High Frequency D/F Test Results using
Jury-rigged Experimental Equipment

1. Tabs A, B and C attached are the log; tabulated geographical coordinates; and the observed, corrected, true bearings and the resultant errors respectively. This data was obtained on Tuesday, 28 June 1960 from a USAF C-47 aircraft flying a course corresponding to the positions given in Tab B.

2. The results, while not impressive at first glance, there being many large errors, are not at all conclusive. This is so because testing of the jury rig was made under impossible (from an accuracy standpoint) conditions.

a. The operator manning the D/F loop was forced to remain standing, tuning the loop by reaching forward over the pilot's head. His findings were aurally relayed to the operator (mostly logging operator in this instance) at a rearward position. This logging operator adjusted the RF and AF gain controls at a signal (mostly inaudible in the ambient noise level) from the D/F loop operator.

b. Bearings as made by the D/F operator were relayed by shouting to the logging operator. It is conceivable that some of the wilder bearings recorded were a direct result of inaccurate reception of the shouted bearing.

c. The navigator, ensconced in a seat toward the aft section of the aircraft, maintained visual contact throughout the flight, pinpointing the aircraft's position on the USAF Operational Navigation Chart with which he was provided. Since there was no intercommunication between the D/F operator and the navigator, a post-flight reduction of data was mandatory. The navigator, having carefully and precisely logged his position on the chart, was compelled to interpolate his timed positions to coincide with the precise times at which bearings were taken. A ready-made source of error.

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d. The aircraft was not always in level flight when some of the bearings were taken, a condition which would not apply in an operational trip.

3. Since the objective as originally outlined, was to "provide a bearing accurate to plus/minus 5° at a distance from the target not exceeding 50 nautical miles," the writer is of the opinion that, provided changes in the system as outlined above were made, and further provided that the D/F operator be "steered" by an alert "tip-off" operator, the jury-rigged equipment as used in these tests, could serve as an interim go-no go indication of the location of given target within the limitations of the requirement.

FOR THE DEPUTY DIRECTOR (PLANS):

25X1A



KJ-1032

Attachments:

Tabs A, B & C

25X1A

cc: CIA/DPD

